

CLAIMS

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1. A semiconductor device comprising:
a semiconductor chip;
at least a first electrode formed on the first major surface of
said semiconductor chip,
at least a second electrode or an insulation layer formed on the
second major surface opposite to said first major surface; and
at least a conductive member for connecting said first electrode
10 with said second electrode or said insulation layer, said conductive
member being formed along the outer circumference of at least a side
of said semiconductor chip.

2. The semiconductor device according to claim 1, wherein each
15 of said conductive members is comprised of a wire bonded to said first
electrode and said second electrode.

3. The semiconductor device according to claim 1, wherein each
of said conductive members is comprised of a conductive clip holding
20 said first electrode together with said second electrode or said
insulation layer.

4. The semiconductor device according to claim 1, wherein each
of said conductive member is comprised of conductive layer formed on
25 the surface of said semiconductor chip extending from said first
electrode to said second electrode or said insulation layer.

5. A semiconductor device comprising:
a plurality of semiconductor device units, each of said
30 semiconductor device units including:
a semiconductor chip;

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at least a first electrode formed on the first major surface of said semiconductor chip,

at least a second electrode or an insulation layer formed on the second major surface opposite to said first major surface; and

5 at least a conductive member for connecting said first electrode with said second electrode or said insulation layer, said conductive member being formed along the outer circumference of at least a side of said semiconductor chip;

10 wherein said semiconductor device units are stacked each other, and said conductive members are connected to each other.

15 6. The semiconductor device according to claim 2, wherein a first chip has a first conducting pattern extended from said first electrode, a second chip has a second conducting pattern extended from said second electrodes, and a bump is provided between said first conducting pattern and said second conducting pattern, which face to each other, for electrically connecting said two conducting patterns.

20 7. The semiconductor device according to claim 5, wherein each of said conductive members is comprised of a wire bonded to said first electrode and said second electrode.

25 8. The semiconductor device according to claim 5, wherein each of said conductive members is comprised of a conductive clip holding said first electrode together with said second electrode or said insulation layer.

30 9. The semiconductor device according to claim 5, wherein each of said conductive member is comprised of conductive layer formed on the surface of said semiconductor chip extending from said first electrode to said second electrode or said insulation layer.

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10. A semiconductor device comprising:
a plurality of semiconductor device units, each of said
semiconductor device units including:

5 a semiconductor chip;

at least a first electrode formed on the first major surface
of said semiconductor chip,

at least a second electrode or an insulation layer formed on
the second major surface opposite to said first major surface; and

10 at least a conductive member for connecting said first electrode
with said second electrode or said insulation layer, said conductive
member being formed along the outer circumference of at least a side
of said semiconductor chip;

a packaging board for mounting said plurality of semiconductor
15 device units;

wherein said semiconductor device units are placed on said
packaging board so as to have a predetermined angle to said packaging
board, and said conductive members of said semiconductor device units
are connected to said packaging board.

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11. The semiconductor device according to claim 10, wherein each
of said conductive members is comprised of a wire bonded to said first
electrode and said second electrode.

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12. The semiconductor device according to claim 10, wherein each
of said conductive members is comprised of a conductive clip holding
said first electrode together with said second electrode or said
insulation layer.

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13. The semiconductor device according to claim 10, wherein each
of said conductive member is comprised of conductive layer formed on

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the surface of said semiconductor chip extending from said first electrode to said second electrode or said insulation layer.

14. A semiconductor device comprising:

5 a plurality of semiconductor chips each having electrodes formed on the major surface thereof, and

a plurality of spacer members each having conductive pattern on the surface thereof;

10 wherein said semiconductor chips and said spacer members are stacked alternately such that said electrodes of said semiconductor chips are electrically connected to said conductive patterns of said spacer members, and said conductive patterns of said spacer members are electrically connected to each other.

15. The semiconductor device according to claim 14, wherein each of said spacer members has a cavity for accommodating the end portion of said semiconductor chip.

16. The semiconductor device according to claim 14, further
20 comprising supporting members having conductive patterns thereon, wherein said supporting members are placed so as to make said conductive patterns thereof contact with said conductive patterns of said plurality of spacer members.

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